UNITED NATIONS

World Chronicle

PROGRAMME: No. 617, recorded 25 January 1996

GUEST: **Dr. William FOEGE**
Executive Director
Task Force for Child Survival and Development

JOURNALISTS: Ian Williams, *Tribune* (London)
Mere Momoivalu, Pacific News Service

MODERATOR: Michael Littlejohns

CHILD IMMUNIZATION

Dr. William FOEGE, Executive Director of the Task Force for Child Survival and Development, which is sponsored by UNICEF, the World Health Organization, the United Nations Development Programme, the World Bank, the Rockefeller Foundation and the Carter Center, discusses a wide range of issues, from the eradication of smallpox to child immunization. The last reported case of smallpox was in Somalia in 1977. The world is approaching consensus on the destruction of the last two reserves of smallpox virus, held by the United States and Russia. Dr. Foege believes that the next disease to be eliminated through vaccination, probably before the year 2000, will be polio. But more resources are needed, to carry out current immunization programmes, and to develop additional vaccines, thereby rendering more deadly diseases preventable, including HIV infection.

WORLD CHRONICLE is produced by the Media Division, Department of Public Information, United Nations, New York, NY 10017, U.S.A.

Duration: 28:01"
Executive Producer: Kamil Taha
Director: Livingston Huckley
Production Assistant: Ellen McGuffie

ANNOUNCER: From United Nations Headquarters in New York, this is **World Chronicle**, an unedited interview programme about major global issues. Here now to introduce our guest is the host of today's **World Chronicle**.

LITTLEJOHNS: I'm Michael Littlejohns, and this is **World Chronicle**.

Since the development of the successful smallpox vaccine 200 years ago, immunization has saved the lives of hundreds of millions of children around the world. A course of vaccinations protects children from a number of deadly diseases, including measles and polio. But are all children receiving the vaccinations that are so critical for their health and development? And what can the international community do to achieve universal child immunization?

With us today is a renowned expert in the field of epidemiology and international health. He is Dr. William Foege, Executive Director of the Task Force for Child Survival and Development, which is composed of a number of UN organizations and other groups committed to child survival and development. Dr. Foege is also a senior fellow for health policy at the Carter Center. Joining me to talk with Dr. Foege are Ian Williams of the *Tribune*, of London, and Mere Momoivalu of Pacific News Service.

Dr. Foege, welcome to World Chronicle.

FOEGE: Thank you.

LITTLEJOHNS: Dr. Foege, we hear a lot about the eradication of smallpox. How can you be absolutely sure that it has been eradicated and that somewhere out there it's not lurking still?

FOEGE: It's a fear people have, but it's been 18 years now since the last case of smallpox. And smallpox leaves a trail behind it: people have scars; it takes several dozen people just to keep one chain of transmission going for a year. And so if it was there over these 17 or 18 years, we would have seen evidence of it. I can tell you, without any equivocation, smallpox is gone.

LITTLEJOHNS: But the virus remains in laboratories in the United States and Russia, I believe.

FOEGE: That's right. Most countries gave their virus to one of the two countries, and those are the two places that still have the virus.

LITTLEJOHNS: And why is it necessary to keep the virus in existence?

FOEGE: At some point, everyone will agree to get rid of the virus. For a period of time, people wanted to do the sequencing to be able to get a fingerprint of each virus so that they would know what constituted a virus. But I think we're at a point now where most people have agreed that it can be destroyed.

LITTLEJOHNS: Going on to the next stage, what is the new target for eradication?

FOEGE: Well, it took 170, 180 years to get rid of smallpox after Edward Jenner developed the smallpox vaccine. The next disease to be eliminated will be polio, and it will take about 45 or 50 years. The polio vaccine first came out in 1955, and the last case of polio should be seen in the world before the year 2000. There's been remarkable progress by the UN agencies in just the last two or three years.

LITTLEJOHNS: And after that?

FOEGE: After that I would expect that measles will be the next disease to be eliminated by vaccine. But also in this decade we will see guinea worm disappear, not by vaccine –

LITTLEJOHNS: Which is a tropical disease.

FOEGE: – that's right – but by public health measures. And I would think some time after the turn of the century we will also see yaws and some other diseases targeted.

WILLIAMS: While the viral diseases, with the exception of HIV, seem to be getting more and more under control, there's a lot of concern that the overuse of antibiotics has made the bacterial diseases much more dangerous. In fact, I think I saw a figure recently that deaths from bacterial diseases rose by 58 per cent in the US over the last decade.

FOEGE: Right.

WILLIAMS: And of course the crucial one in many ways is TB, which is one of the biggest bacterial killers. Do you have a programme to eliminate tuberculosis? And, if not, why not?

FOEGE: Well, there is a programme that WHO runs to eliminate tuberculosis. I think everyone agrees we need a better vaccine at this point, but also that we need better control. One of the values of vaccine, vaccines don't develop resistance as antibiotics do. And therefore if you develop the right vaccine, it only has to be done once in the entire history of the world, and then from there you can do what has to be done to get rid of a disease. With antibiotics, with pesticides, with other approaches one has the organism adapting and developing resistance.

Tuberculosis I think is now the leading cause of death in the world. It ties with tobacco as the most lethal agent in the world. And there's so much attention now on doing better with treatment – that we really treat people under observation and so forth – that I expect tuberculosis will see some improvement in the future.

WILLIAMS: But isn't one of the problems that it's an extremely expensive disease to treat? I mean, one shot of vaccine is cheap, but a long course of treatment with multiple antibiotics to combat the resistance is expensive, time consuming, and difficult for the resources even of New York City to maintain, let alone under-developed countries in the third world.

FOEGE: It's one of the vaccines that, you do it once, and, you're right, you have the benefits forever. Tuberculosis turns out to be less expensive than we think when you look at the benefits. Nonetheless, vaccines are the foundation of international health because they're cheap, they're preventive; they turn out to be one of the best buys for the dollar.

MOMOIVALU: Dr. Foege, I'm just going to take you back to the eradication of smallpox again. Can you identify or say for us which areas in the world, you know, the smallpox is still in existence today, by region or by country?

FOEGE: Well, there's no smallpox left any place in the world, but 30 years ago the real problem areas were the sub-continent – India, Pakistan, Bangladesh – and Africa. But then gradually in the 1960s and early '70s we saw the disease disappear, and so by 1975 the last case was seen in India; by late 1975, the last case in Bangladesh. And there was a point in October of 1977 when a family went to a hospital in Somalia; two children, both with smallpox, were admitted to the hospital. The parents asked for directions to the infectious disease ward. The cook at the hospital said, "I'll take you." And in those few minutes that cook got smallpox, but it was the last case of smallpox in this chain that went right back to the very first case, and it was finally the culmination of the dream that Edward Jenner had in 1796. So, 1977, that was the last naturally occurring case in the world. We've not had a case in any region of the world since then.

MOMOIVALU: Could I just have a follow-up question on that? There's a lot of talk, and I've also noticed that you have actually spoken about insufficient resources as one of the problems which is hindering your global immunization campaign. How do you propose to solve it?

FOEGE: One of the problems, our science is always ahead of everything else. It's ahead of our sociology, it's ahead of our law, it's ahead of our ethics, ahead of our theology. We now have such great tools to eliminate disease, and we can't get the small amount of money required to use those tools. To think of protecting a child for life from polio for the cost of a cup of coffee, I mean, it should seem obvious that it's worth investing, but we're having trouble. And in fact we seem to be having more trouble recently; the world's less interested in investing in these things. It's going to require more education, we must allow people to see what are the long-term benefits of these small investments.

LITTLEJOHNS: Dr. Foege, I guess we could go down a whole list of nasty diseases that it would be nice to have vaccines to take care of. But hepatitis is quite a serious problem, particularly in tropical countries where sanitation is not very – well, not only tropical countries, but places where sanitation is lacking. What are the prospects in that area?

FOEGE: Hepatitis is one of the great stories of the last several decades, because it's the first time that we've had a vaccine that is good for an infectious disease and also for a cancer, because hepatitis leads to liver cancer at high rates in much of the world.

LITTLEJOHNS: That's only one type of hepatitis, isn't it?

FOEGE: That's right, hepatitis B. We now have a vaccine for hepatitis B that will attack this early in a child's life but protect them from cancer late in life. So it's our first anti-cancer vaccine. It started out being very expensive, but the price has come down. And again, when one looks at what you're preventing, it turns out to be a bargain. In many countries of the world, they're now including hepatitis B vaccine in the routine childhood immunizations. That will spread to the entire world at some point. So it's a great success story.

LITTLEJOHNS: And this vaccine protects against all types of cancer, or just liver cancer?

FOEGE: Just the liver cancer that results from the hepatitis.

WILLIAMS: You can't carry on drinking a bottle of scotch a day! Without risking a liver cancer!

LITTLEJOHNS: Maybe half a bottle.

[LAUGHTER]

WILLIAMS: On the ecological – I mean, as far as a microbe is concerned, a virus or a bacteria, then humans are just sort of grazing grounds. Is there any sort of fear that, as you eliminate these, that somewhere waiting in the wings is another sort of virus or microbe that will move in to fill the gap left by smallpox and measles and polio? And obviously the fears of Ebola virus spreading are limited because of the nature of its – it needs physical contact for transmission. But is there any chance that somewhere lurking in the jungles or in the steppes is a virus or a microbe just waiting for a clean field of human beings to graze on?

FOEGE: I think there's no question that we're going to continue seeing new diseases. When you look at the frequency with which new ones have arisen, just in the last several decades – we have Lassa fever, we have Ebola virus, we have toxic shock syndrome, we have legionnaires' disease – it goes on and on. AIDS is the one that worries most people now. It's going to continue happening. I don't think that's so –

WILLIAMS: To what extent are these new diseases and to what extent are they diseases that would have been dismissed as a fever or consumption or one of the other vague medical terms until a few decades ago?

FOEGE: I think we have the entire range of diseases that were probably some place in the ecosystem forever, in animals or something, but a change in the sociology, a change in

the crowding of people – changes have allowed them to come out. But it seems reasonable to me that there are also evolving new viruses and new bacteria. So I think we have a combination of things. We also have diseases that are getting worse for some reason – you mentioned tuberculosis, because of the resistance to antibiotics. And we are also seeing more and more older people who are compromised immunologically, where we have hospital infections that are causing bigger problems. So you have the entire range of problems. I'm not sure that's because they're filling any niche that's been left behind because smallpox has been eradicated. I think that's the nature of evolution, that every organism is competing for a place, and we're going to have to have a better global surveillance system to pick up these problems early on.

WILLIAMS: So unemployment is never going to be a problem for immunologists.

FOEGE: That's right.

MOMOIVALU: Dr. Foege, I was going to mention the concern by your team over the impact of HIV. How does this affect your work overall? Do you have to set aside additional resources for that particular work?

FOEGE: HIV is a problem in every aspect. That is, there's a big human price that's being paid, and there's a scientific price that's being paid because you now have to concentrate on this disease at the expense of some other diseases. It is a problem for people that get combinations of diseases, and so there is no question that we have to invest heavily in this until we have an answer. On the positive side, I think that we are now seeing some of the more positive developments in the 15 or more years of HIV. That is, we know something about strains that protect against other strains. We know more about the incubation period and the fact that there's a battle going on from the first day, and it may not be that one has to eliminate the virus, you have to change the balance so that the person can lead a normal life even if they have the virus. We're learning about drugs that seem to have a new applicability. So I think that there is some good news on the horizon, but that doesn't take away from the fact that this has been a tragedy for many millions of people now in every country in the world.

LITTLEJOHNS: This is World Chronicle. Our guest is Dr. William Foege, Executive Director of the Task Force for Child Survival and Development. Dr. Foege, tell us a bit about the Task Force. How was it created? When was it created? What are the components of the Force? And what are the areas in which you are operating?

FOEGE: In 1984, the Director of WHO, Halfdan Mahler, and the Director of UNICEF, James Grant, met with Jonas Salk and Robert McNamara, and with –

LITTLEJOHNS: Salk was the polio vaccine.

FOEGE: That's right, Jonas Salk developed the first polio vaccine in 1955.

LITTLEJOHNS: And McNamara was at the time the President of the World Bank?

FOEGE: He was no longer President of the Bank, but he was interested in many of the disease problems of the world. And their question in 1984 was how could we speed up the process of immunization in the world? At that time they calculated less than 15 per cent of children were being immunized in the world. And so the Task Force was formed by that group – and then went on to include the World Bank and UNDP – to see if there could be collaborations between the UN agencies to speed this up. The result was more spectacular than anyone had imagined. The world went from 15 per cent coverage to 80 per cent coverage six years after that.

LITTLEJOHNS: These vaccination programmes, you mean?

FOEGE: That's right. So 80 per cent of children by 1990 were being reached by immunization programmes. Eighty per cent of children were getting their measles vaccine and their polio vaccine, and so forth. It stayed at about that level between 1990 and the present time. And now we're asking the question, how could we come up with better coverage, how could we come up with better vaccines? For instance, if you could have vaccines where you only visit a child once rather than requiring booster doses.... It's hard to get back a second time and a third time and a fourth time. We're asking, could we get vaccines where there are combinations, so you don't have to give so many injections? And finally, could you come up with vaccines where you don't inject at all? Could you have children inhale the vaccines, or take all of them by mouth, and get away from needles and syringes? And could you get vaccines that don't require refrigeration, so you don't have to invest in the cold chain, the refrigerators and so forth? So we're looking at remarkable progress in the 1980s and 1990s, but we haven't seen anything yet. The future is going to be spectacular with vaccines.

LITTLEJOHNS: So the problem is lack of money, or lack of knowledge? Or the research is not sufficiently advanced, or what?

FOEGE: It's lack of resources to continue the high maintenance required to get to new children. There are 130, 140 million new children every year. It's lack of money for the research. We think much of the research capacity already exists in the world; it's how to put it together and focus it on these problems. Most of the research in the world is focused on the problems of the rich. How could you get this refocused on the problems of the poor?

WILLIAMS: One of the problems of the rich in a country like the US, I understand, is that the lack of a national health service here means that the US itself has a very low rate of child vaccination compared with many developing countries. Does this mean that the US could be vulnerable if any of the diseases came here?

FOEGE: Well, the US in the late 1970s made a real initiative to improve immunization, but they aimed this at school age, to get to 90 per cent by school age. They did much better than that, the US got to 96 per cent by school age, but then found that's not early enough, we have to do it by two years of age. And so when you see the figures about US immunization, it's referring to two years of age, and we're still struggling with how to improve that. Could the US be vulnerable? It's amazing how good the immunization is here. Our last case of polio, for instance, was in 1979, and it was an outbreak that went from a religious community in Pennsylvania to some other states, but it never got out of the religious community. The immunity was so good for polio that it stayed in that unvaccinated group. So I think that our immunization rate is high enough that we have to be on guard, but it's not a big risk. We have averaged, over the years, about two importations of measles every week into this country, and we know that, and yet we're able to control measles to a great extent. In fact, the evidence now is the strains of measles that we're seeing in the United States are all imported, so that the United States actually interrupted its own measles strains.

MOMOIVALU: Dr. Foege, one of your colleagues in the World Health Organization, I think it is Dr. Lee, talks about the reluctance among countries to continue funding the work of your immunization campaign. Why is there reluctance, do you think?

FOEGE: Dr. Lee is correct, and part of it is the success of science, that there are so many more interventions now than there were 15 years ago. Fifteen years ago, immunization was really about all we had to offer. Now we have diarrhoeal disease programmes with oral rehydration; we have the anti-helminth programmes, that is the programmes against the worms, which have been very effective; we have nutrition programmes; we have the micronutrient programmes – iodine and iron and vitamin A and so forth. There are so many things that are beginning to compete with each other that some people want to invest in the new things and not the old things. So, for instance, it's been very hard to get money for polio eradication, even though it's one of the world's best buys on a long-term basis, because of these competing interventions. But Dr. Lee is absolutely correct, we're just having trouble getting the basic resources.

MOMOIVALU: Can I just follow up on that? What about the current global cuts by aid donors, for instance? How does that impact on your work?

FOEGE: It all hurts. I mean, we are not able to do as much globally as the science would allow us to do if we had the resources. And, you see, this is a responsibility, a real responsibility. A man by the name of Primo Levi wrote a book called *The Drowned and the Saved*, and in that book he said once you know how to avoid or prevent torture, you become the torturer if you don't do that. That's the position we're in. We have these vaccines, we

know how to prevent torture, and somehow we're becoming the torturer by not applying those tools.

WILLIAMS: Without being too cynical, isn't it true that what you're doing to some extent is because polio is very easily eradicable? You've picked an easy target to follow up on the big public relations triumph of the eradication of smallpox as a means of focusing world attention on the possibilities of immunization in general. I mean, you've picked on one that's almost on the verge of disappearance to say "We're going to eliminate it"; you didn't pick on something that was much more difficult, like tuberculosis, and say "We will eliminate TB in ten years." You picked on a disease that seems to be almost disappearing under the impact of existing programmes. I mean, without – I mean, obviously there's good reason for this, but is there a public relations aspect to picking on the polio to eradicate?

FOEGE: I can tell you there is no easy disease to eradicate. It was not easy to eradicate smallpox. It was a labour-intensive operation. It's not easy with polio. And the reason we're down to a vulnerable point in polio is because of the accumulation of lots of people doing public health work. But even these end stages are very hard. Right now we have probably 47 or 48 countries in Africa with polio. Each one is going to be a labour-intensive operation to actually go through, look at all the paralysis, try to get a polio virus out of the stool and make sure whether or not that country has polio. Some of them have not reported polio for two or three or five years, but we don't know if it's there. So it's a lot of work.

LITTLEJOHNS: Mere?

MOMOIVALU: I was just going to the last question on this financial.... I guess Governments are responsible in part for the reluctance, so is it a lack of political will to help your campaign and eradicate diseases?

FOEGE: I've always said that in order to do something about a disease we have to have an interaction between the scientific ability and the social will. The first time those actually came together was with smallpox eradication. The reason that we haven't done more on tuberculosis is that, for some reason, that social will has not met the need to use our scientific ability. And so we have to get both the social will and the scientific ability, and Governments – this has to become a political event. That is, heads of state have to see some value in improving the health of children and eradicating disease before it will really meet its scientific potential.

LITTLEJOHNS: Dr. Foege, earlier in the programme you mentioned diseases induced by the consumption of tobacco. A lot of people seem to find it very difficult to overcome their addiction to tobacco once they acquire it. Is there anything that's being done in your community, the epidemiologists, to perhaps develop some kind of – I don't know –

vaccine or something which could help them, apart from this chewing gum thing, which apparently is not entirely effective, to cure the addiction?

FOEGE: Tobacco is an exceedingly difficult problem made up of two sub-problems. I would like to have a vaccine for each one of those. One is the problem of greed, and –

LITTLEJOHNS: The problem of what?

FOEGE: Of greed.

LITTLEJOHNS: You mean the tobacco companies wanting to sell their product?

FOEGE: That they're willing to sell their product even when they know what it does to health because of the money that they make. And I don't see a vaccine for greed. The other is the one you mentioned, addiction. And it's a very powerful addiction. I, and many others, have experienced that addiction and know how hard it is to –

LITTLEJOHNS: So have I.

FOEGE: – yes – overcome. I used to say that I'm one of the few people that I've ever known that was sufficiently addicted that I used to smoke in the shower. And to be able to smoke in the shower, you have to be addicted and you have to be very tall. Which I am.

[LAUGHTER]

The problem of addiction, I think that's one place we have to aim this, but second, we have to aim the programme at how to keep children from trying this early on. Because we know now that it takes very little tobacco in order to trigger that addiction. Less than a pack of cigarettes, just a few cigarettes. And so if a child of 13 tries this, they have a good chance of becoming addicted. If they wait until 20, they are not going to try it. And so the question is, how can you delay this onset of first trying? But I can tell you it's one of the most difficult problems that we face in public health, and I think future generations won't even understand how we could have allowed this to happen without attacking it more aggressively.

LITTLEJOHNS: Do you think there's a possibility of producing a cigarette which is not going to be so damaging to health? I mean, is it possible to sort of decriminalize tobacco?

FOEGE: I think it's possible, but very unlikely. I think it's going to be much more likely that we find a way, as you mentioned, to immunize against the addiction, against the urge.

LITTLEJOHNS: A patch, some kind of patch thing? Is that – there's been some effort in that direction, hasn't there?

FOEGE: That's right. As we learn what it is that actually happens in the brain that causes addiction, I think we have a chance of finding a way around that.

LITTLEJOHNS: Dr. Foege, you've covered a lot of territory, and a lot of diseases, and hopefully when we're next on the programme we'll have eradicated at least one more disease. That's all the time we have. Thank you for being with us on this edition of **World Chronicle**.

Our guest has been Dr. William Foege, Executive Director of the Task Force for Child Survival and Development. He was interviewed by Ian Williams, of the *Tribune*, of London, and Mere Momoivalu, of Pacific News Service. I'm Michael Littlejohns. Thank you for joining us. We invite you to be with us for the next edition of **World Chronicle**.

* * * * *

Transcripts of the programme may be obtained free of charge by sending a stamped, self-addressed envelope to: **World Chronicle**, United Nations, Room S-827, New York, New York, 10017, USA.

World Chronicle is broadcast worldwide and features guests whose work is concerned with major global issues. This programme is a public affairs presentation of this station from United Nations Radio and Television.

Additional information material about the United Nations can be obtained by writing to the Public Inquiries Unit, United Nations, Room GA-57, New York, New York, 10017, USA, or the UN Information Centre in your country.